

BIMM 101: Recombinant DNA Laboratory

Spring 2017

Instructor Cindy Gustafson-Brown
Office Humanities and Social Sciences 1145E
Phone 534-4242
email cgb@ucsd.edu (Put **BIMM101** in the subject line!)
Office hrs Tues, 1:30-2:25 PM in HSS 1145L

Lecture M/W/F 1:00-1:50 PM, WLH 2205

Labs Wed/Fri, 2-5:50 PM
York 4318 & 4332 – Check which room you are in!

Instructional assistants: F01 Yasin Torres-Tiji ytorrest@ucsd.edu
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Learning objectives

- Learn the theory behind molecular techniques, and the applications of the methodologies in biological research
- Become proficient at basic molecular biology techniques
- Learn the importance of proper controls in designing experiments and interpreting results
- Improve lab math skills and ability to graph data correctly
- Learn to make logical conclusions from experimental data
- Become familiar with bioinformatics websites
- Learn to find, read, and evaluate primary literature
- Become aware of the implications of the technology for society

Required reading

- BIMM 101 Lab Manual, available at UCSD bookstore
- Additional required readings may be posted on class web site on TED.

Required materials

- A lab coat – must extend down to your knees
- A fine point Sharpie marker – dark color
- UV-blocking eye protection (you may wear either safety glasses or goggles, but standard prescription eye glasses are not sufficient)
- Calculator
- iClicker – registered on TED (not on the iClicker website)
- Long pants and close-toed shoes are required in lab at all times – no skin on feet or legs should be showing

Students with disabilities *(from their website)*

Students requesting accommodations for this course due to a disability must provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD) which is located in University Center 202 behind Center Hall. Students are required to present their AFA letters to Faculty (please make arrangements to contact me privately) and to the OSD Liaison in the department in advance so that accommodations may be arranged.

Contact the OSD for further information: 858.534.4382 (phone)
osd@ucsd.edu (email)
<http://disabilities.ucsd.edu>(website)

Lab Safety Training

Enrolled and waitlisted students **MUST** successfully complete the Biology Lab Safety Training and Assessment before the first lab session:

<https://dbportal3.ucsd.edu:3443/safety-training/>.

Please note that courses offered by other departments (Chemistry, for example) may have additional safety training requirements.

Attendance, Enrollment, Absences

1. Enrolled and waitlisted students **MUST** attend the first lab session.
Additional details: <http://biology.ucsd.edu/go/ug-labs>.
2. **ADD/DROP DEADLINES** are different for lab courses than lecture courses. Students who drop a Biology lab class after the end of the second class meeting will be assigned a "W". Additional details:
<http://biology.ucsd.edu/go/ug-labs>.
3. Your attendance is required at EVERY lab, until all the experimental work for the day is completed. *This includes supplemental discussion/learning times in lab.*
4. Absences are not to be taken lightly. Your absence will place an unnecessary burden on your partner. There are no make up labs and you will not be allowed in the lab on non-lab days or in the other lab sections, although you may be asked to make up the work from the day you missed.
5. Absences due to scheduling conflicts (e.g. other classes, exams, scheduled meetings, etc) will not be excused. If you are likely to have interviews for graduate school, please schedule them on non-lab days.
6. If you are ill or have an emergency on a lab day or when an important assignment/exam is imminent, e-mail or call (instructor and IA) before the start of the lab, due date, or exam. It is not sufficient to contact your IA alone as your IA does not have the authority to excuse your absence. All absences without **PRIOR** approval of the instructor (not the IA) will be considered unauthorized, unless an emergency prevents you from notifying us. If an emergency prevents you from contacting us prior to the lab, you must contact Dr. Gus within 24 hours to explain.

7. If you are ill enough to miss lab, a due date, or an exam, you must go to a health clinic and provide documentation of your illness. Appropriate documentation will be required for all unavoidable absences. Provide this to your IA within 1 week of your absence.
8. **YOU MUST MEET WITH YOUR TA TO DISCUSS MISSED WORK.**
Once you have done this, email your instructor the date of the meeting.
9. **50-point penalty** for the first unauthorized, unexplained absence from the lab. If you miss 2 labs, you will need to drop the course or receive an F.

Grading Scheme

	Points
15 pre-lab quizzes (3 pt each)	45 points
17 pre-lab outlines (1 pt each)	17 points
lab notebooks	20 points
6 lab quizzes (50 pt each)	300 points
6 submitted assignments	300 points
iClicker responses	50 points
Lab performance/skills/professionalism	28 points
Comprehensive exam	240 points
Total	1000 points

1. **Pre-lab quizzes 4.5%:** Prior to most labs, there will be an online pre-quiz. These are cumulatively worth a total of 4.5% of the final grade. You will have 48 hours prior to the start of lecture to complete the quiz, which will consist of 3 questions related to that day's lab. You will have two attempts to get the answers correct.
2. **Pre-lab outlines 1.7%:** Prior to each lab you should write a one-page, pre-lab outline in your lab notebook. It should include the plan and goals for the day, and a prediction about the results, if possible. When you first arrive in lab, tear out the carbon copy and place it on the IA's desk within the first 5 minutes of class.
3. **Lab notebooks 2%:** At the end of each lab day, tear out the carbon copies of the entries for that day, staple them, and place them on the IA's desk.
4. **Lab quizzes 30%:** Lab quizzes are indicated on the lab schedule (posted on TED). Each lab quiz is worth 5% of your final grade. The quizzes will cover the lectures, readings, and lab experiments since the previous quiz, and the purpose of that day's lab. Study guides will be posted on TED.

Note: If you come into lab late and miss the quiz, you will receive a zero for that quiz.

- 5. Submitted assignments 30%:** These will vary in point value and format, but cumulatively they will comprise 30% of your final grade. Guidelines for each submission will be posted on TED.
- 4. iClicker 5%:** More information on clicker questions is provided below.
- 5. Lab performance/skills/professionalism 2.8%:** All students are expected to be good lab citizens. Your attitude, cooperation with others, conscientiousness, work ethic, technique and skill in the lab will contribute to your grade. Lab performance will be based on the following criteria:
- a. PRE-LAB PREPARATION
 - b. PRE-LAB PREPARATION
 - c. PRE-LAB PREPARATION
 - d. Paying attention during instructions
 - e. Being responsive to correction
 - f. Technical skill and careful management of lab procedures (e.g. success of experimental procedures, judicious use of reagents, proper waste disposal, etc.)
 - g. Taking care of university property (consistently locking your locker, etc.)
 - h. Ability to adapt to unforeseen procedural changes
 - i. Caliber of thinking before asking questions
 - j. Scientific approach (e.g. controls, experimental design, powers of observation)
 - k. Accuracy
 - l. Independence and initiative
 - m. Safety consciousness
 - n. Organization and general neatness in lab
 - o. Contribution to your group and cooperation with classmates
 - p. Integrity
- 6. Comprehensive exam 24%:** There will be a comprehensive exam on the last day of class, Friday, June 9, during the lab.

Note: Just coming to lab does not ensure that you will get a passing grade in the class. You must hand in all assignments and get a passing score on those assignments to get a C- in the class.

Assignment Deadlines and Submission Policies

- 1.** Assignments must be handed in **at the START** of lab on the due date. Penalty for late assignments is 30%, if turned in by 6 PM the next day. Late work is not accepted after that. **You** must make arrangements with your IA, **in advance**, to turn in the late work.
- 2.** In addition to the hard copy, you are required to submit an electronic copy of homework to Turnitin.com, by the due date/time. A link to the e-

submission website will be provided on TED. Failure to submit to Turnitin.com will result in zero points.

Students agree by taking this course that all assignments will be subject to review for textual similarity by Turnitin.com for the detection of plagiarism. All submitted assignments will be included as source documents in the Turnitin.com database, solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the terms of use agreement posted on the Turnitin.com site.

3. Although you will be doing the experiments and collecting data with a partner, you must hand in your own homework, *written in your own words*. **Copying someone else's lab report or homework is cheating** (see below).

Regrade Requests

All regrade requests should be submitted in writing within five days of receiving the graded material. You must read the regrade policy, posted on TED, and submit your request with a "regrade request form" stapled to the exam/quiz/assignment. If there is free time in the lab, it is recommended that you (respectfully) speak with your IA about material you did not understand. Alternatively you may make an appointment with your IA, or come to Dr. Gus' office hours.

Grade Distribution

A = 90% - 100%

B = 80% - 89.9%

C = 68% - 79.9%

D = 60% - 67.9%

F = below 60%

iClickers

You may start earning points by answering iClicker questions on **Wed, April 5**, in lecture.

Your iClicker **MUST** be registered on TED in order for your responses to be assigned to you.

Points available:

35 points for participation

15 points for accurate answers

50 points total = 5% of your grade.

iClicker Participation Points (35 points)

In order to receive these points each day, you must respond to 80% of the questions in that lecture. It does NOT matter if your answer is correct.

There are different numbers of questions each day, so you may use the table below to determine how many times you must respond for participation credit a given day.

total questions	6	5	4	3	2	1
required responses	5	4	4	3	2	1

Q. How many days will we have clicker questions?

Probably ~24 days.

Q. How do I get the participation points each day?

You must answer 80% of the questions posed that day. The number of questions will vary from lecture to lecture.

Q. How many days will I have to be present to qualify for full participation points?

You get three free absences without penalty. Full credit will be allocated if you click in every day except three.

Q. If my battery fails, or I forget my clicker, but I do attend the class, do I get participation for that day?

No. You are allowed three “permitted” absences – so you don’t have to ask me about making up the missed days. We don’t have to negotiate credit; you can still get all 35 participation points from the remaining days attended.

Q. If I only attend a few lectures, will I get any participation points?

Yes, you can still get points each day if you answer 80% of the questions that day.

iClicker Accuracy Points (15 points)

You may receive additional credit for answering questions correctly.

There are different numbers of questions during each lecture. Every question is graded individually, even if it is a repeated question (e.g. asked before and after group discussion). The total number of questions over the quarter is unpredictable, and will only be known when the quarter ends.

If you correctly answer 70% of the total questions in a quarter, you will receive the full 15 points possible for accuracy.

Here is a hypothetical example: IF there are 100 questions total in a quarter, you must answer 70 questions correctly to receive the maximum credit of 15 points. In that case, you will receive $15 \text{ pt}/70 \text{ Q} = 0.214$ points per question up to a maximum of 15 points.

This is NOT all or nothing. You get credit for as many as you answer correctly, up to 15 points.

Q. If my battery fails, or I forget my clicker, but I do attend the class, do I get accuracy points for that day?

No. You only need to get 70% of the questions correct in order to get full credit. Please do not ask about making up missed days. We don't have to negotiate credit; you can still get all 15 points from the remaining days attended.

Additional iClicker information

Q. What kind of clicker should I buy and where can I get it?

The iClicker, preferably version 2, although the regular iClicker works too. You can get one at the UCSD bookstore.

Q. Can I share a clicker with another student?

No! If you are found to be using another student's clicker, or if another student is using your clicker, you will both receive a failing grade in the class, and will be referred to the Office of Academic Integrity for administrative discipline.

Q. Will the clicker results be posted on TED?

No. You may keep track of your own results each day. The clicker questions are posted at the end of each day on TED, with the lecture slides. The answers to the questions are revealed in class.

Q. What is my best strategy for getting all the points?

Do your reading in advance, show up for as many lectures as possible, stay awake, and PARTICIPATE!

Course Website

This course is on TED (<https://ted.ucsd.edu>) and should automatically appear on your TED account as soon as you register for the class. We will use TED to post announcements, information on experiments, exams, schedules, readings and practice material, experimental data, assignment guidelines, etc. Please check the site regularly and update yourself on the information provided.

Policy on Integrity of Scholarship

Your assignments for this class must be independently written, *i.e.* **your own ideas in your own words**. While discussion of data among lab partners is encouraged, each student must independently complete all text, references, figures, graphs, and tables. The submission of homework or papers by lab partners that contain shared or copied work is forbidden. *Both* students will be held accountable. The exception is when a figure or table contains the raw data that is supplied to all members of the group (*e.g.* absorption spectra or gel photos). In this case the creation and labeling of that figure must be done independently. If you have questions about the difference between discussing your work with others and unauthorized collaboration, please ask your instructor or IA for clarification.

Because assignments are to be your own work in your own words, **you may not**

view, copy or paraphrase, to any extent, current or past papers or homework written by other students. This is plagiarism, a direct attempt by the student to present the ideas of others as their own, and is no different than cheating on an exam.

Copying material from another source without putting it between quotation marks is plagiarism, even if the source is cited as a reference. In science writing it is not customary to directly quote others. Rather, you should paraphrase (or summarize) the ideas of your source **in your own words** and then *cite the reference*.

Plagiarism in homework or papers is rigorously sought out and penalized.

Because all quizzes, exams, homework, and iClicker participation are required for satisfactory completion of this course, any student caught cheating on a quiz, exam, homework, or iClicker participation may be given a failing grade for the course and referred to the Office of Academic Integrity for administrative discipline.